

## REMARKS

The applicant has canceled the nonelected claims 20-30. In addition, claim 31 has been amended to recite means for generating a calcination temperature of at least 1700°F in the calcination zone. Claims 31 and 33 have also been amended to change the term “ceramic” to -refractory insulation-.

The Examiner states that the amendments to the specification and claims in the applicant’s paper filed 06 July 2006 do not comply with 37 CFR 1.173(b). The Examiner is correct and the applicant has amended the specification and claims appropriately herein.

Claims 31-36 are rejected under 35 USC 251 as being based upon new matter. The Examiner holds that the phrase “the peripheral wall being substantially free of ceramic along part of said calcination zone” is not supported by the originally filed specification.

The applicant will begin to address this rejection by noting that the term “ceramic” in the claims has been changed to -refractory insulation- which is clearly disclosed in the original patent. Furthermore, please observe that a calcining reactor is identified at 14 in the original patent and that the peripheral wall of the reactor 14 is clearly visible in the drawings. Hence, the peripheral wall of the claims does not constitute new matter. Moreover, as pointed out previously by the applicant, lines 19-27 in column 6 of the original patent refer to “calcining reactor, cyclone, heat exchangers)” [emphasis by the applicant] when teaching that the need for refractory insulation is eliminated. Since the original patent clearly teaches that refractory insulation can be omitted

from the calcining reactor, it follows that refractory insulation can be omitted from the peripheral wall of the reactor.

In rejecting the claims under 35 USC 251, the Examiner states that "said part of said calcination zone" is the part along which the particulate material is transported. The Examiner asks whether there are any parts of the calcination zone through which the particulate material will not be transported.

The applicant respectfully points out that the claims recite means for transporting particulate material through at least part of the calcination zone along a substantially cyclonic flow path. The Examiner will note that this language does not exclude transporting the particulate material through the entire calcination zone along a substantially cyclonic flow path. The subsequent recitation that the peripheral wall is substantially free of refractory insulation along "said part of said calcination zone" is then proper because the claims provide antecedent basis only for the previously recited part of the calcination zone. Again, the Examiner will be aware that the language does not exclude the omission of refractory insulation from the entire calcination zone.

The applicant also respectfully points out that the omission of refractory insulation from an entire calcination zone inherently includes the omission of refractory insulation from part of the calcination zone. For example, one could consider the calcination zone to consist of an upper part and a lower part. If refractory insulation were omitted from the entire calcination zone as implied in the original patent, it is clear that refractory insulation would be omitted from the upper part of the calcination zone.

Considering still 35 USC 251, the Examiner states that the reissue declaration filed with the present application is defective because the declaration fails to recite the alleged error of the peripheral wall being substantially free from refractory insulation along part of the calcination zone. In this connection, claims 31-36 stand rejected under 35 USC 251 as being based upon a defective reissue declaration.

The applicant has enclosed herewith a new reissue declaration in which the phrase "elimination of refractory from a wall of a calcination reactor" has been replaced by the phrase -elimination of refractory insulation from at least part of the peripheral wall of a calcination zone-.

In view of the foregoing, it is respectfully requested that the rejection of claims 31-36 under 35 USC 251 be withdrawn.

Claims 31-36 are further rejected under the first paragraph of 35 USC 112 on the ground that "said peripheral wall being substantially free from refractory insulation along said part of said calcination zone" is not supported by the originally filed specification.

The applicant believes that this issue has already been covered in the discussion relating to the rejection of claims 31-36 under 35 USC 251.

In rejecting claims 31-36 under the first paragraph of 35 USC 112, the Examiner requires the applicant to point out where support can be found in the original specification for each and every word in the broad claim 31. In particular, the Examiner requires the applicant to point out the

exact part of the calcination zone through which the particulate material is transported along the cyclonic flow path; what part of the peripheral wall is substantially free of refractory insulation; and where such part of the peripheral wall is located.

The Examiner is respectfully requested to point out where there is a requirement in 35 USC, 37 CFR or the MPEP for exact support of each word in a claim. The applicant is aware of no such requirement. In fact, the Examiner's requirement runs directly contrary to MPEP 2173.05(e) which states the following in the paragraph headed A CLAIM TERM WHICH HAS NO ANTECEDENT BASIS IN THE DISCLOSURE IS NOT NECESSARILY INDEFINITE:

“The mere fact that a term or phrase used in the claim has no antecedent basis in the specification disclosure does not mean, necessarily, that the term or phrase is indefinite. There is no requirement that the words in the claim must match those used in the specification disclosure. Applicants are given a great deal of latitude in how they choose to define their invention so long as the terms and phrases used define the invention with a reasonable degree of clarity and precision.”

In view of the foregoing, it is respectfully requested that the rejection of claims 31-36 under the first paragraph of 35 USC 112 be withdrawn.

Claims 31-36 are additionally rejected under the second paragraph of 35 USC 112.

In a first ground of objection under the second paragraph of 35 USC 112, the Examiner states that the language “being substantially free from refractory insulation along said part of said calcination zone” is a negative limitation that renders the claims indefinite because it is an

attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. To support this ground of objection, the Examiner cites *In re Schechter*, 205 F.2d 185.98 USPQ 144 (CCPA 1953).

The applicant respectfully draws the Examiner's attention to the fact that *In re Schechter* has been superseded and is obsolete. Please see the second paragraph of MPEP 2173.05(i) which sets forth the following:

“A claim which recited the limitation “said homopolymer being free from the proteins, soaps, resins, and sugars present in natural Hevea rubber” in order to exclude the characteristics of the prior art product, was considered definite because each recited limitation was definite. *In re Wakefield*, 422 F.2d 897, 899, 904, 164 USPQ 636, 638, 641 (CCPA 1970).”  
(emphasis by the applicant)

In a second ground of objection under the second paragraph of 35 USC 112, the Examiner states that the specification fails to explain what percentage of the materials that are substantially free from refractory insulation may or may not be used.

The applicant is not sure what is meant by this objection. Lines 7-8 in column 5 of the specification state that “The reactor 14 consists of a high-temperature alloy, vertical pipe located inside the feed silo,...” and it is not clear to the applicant how percentages come into play. The Examiner is respectfully requested to clarify the ground of objection under discussion so that the applicant can respond more fully.

In a third ground of objection under the second paragraph of 35 USC 112, the Examiner states that the words “substantially free from refractory insulation” are indefinite because it is not understood what “substantially” is.

With respect to the term “substantially”, the applicant respectfully proposes that the Examiner consult with a Supervisor having long tenure in the Patent and Trademark Office. The applicant believes that, in cases like the present one, the Examiner will find the term “substantially” to have been accepted by the Patent and Trademark Office for at least the last 30 years.

In relation to the rejection of the claims under the second paragraph of 35 USC 112, the Examiner remarks that, on page 8 of the applicant’s Paper filed 06 July 2006, the applicant argues that the peripheral walls of the calcination zones in the prior art are completely lined with refractory. The Examiner goes on to say that, according to the applicant, significant damage to the reactors of the prior art would result if the refractory insulation were removed or eliminated. The Examiner notes that the applicant’s broad claim 31 contains the language “substantially free from refractory insulation” which would seem to imply that the claimed structure is intended to damage the reactor. The Examiner questions whether this is correct.

The applicant believes that the Examiner has made a very valid observation. The answer to the Examiner’s query is as follows:

When particulate material is conveyed along a calcination zone along a substantially cyclonic flow path as in the applicant’s claims, the particulate material tends to migrate towards the

peripheral wall of the calcination zone. The particulate material then forms a curtain or shroud between the peripheral wall and the interior of the cyclonic flow path. This curtain or shroud forms a shield which protects the peripheral wall from the intense heat which can arise in the interior of the cyclonic flow path. The applicant has recognized for the first time that such shield makes it possible to remove the refractory insulation which the prior art considers mandatory for calcination zones operating at high temperatures like those in the claims. Please note that the applicant is successfully operating a high-temperature calcination reactor with a peripheral wall substantially free of refractory insulation.

In view of the foregoing, it is respectfully requested that the rejection of claims 31-36 under the second paragraph of 35 USC 112 be withdrawn.

Claims 31-36 are additionally rejected under 35 USC 102(e) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over U.S. Patent No. 5,713,734 to Makris or U.S. Patent No. 3,881,862 to Nishida. The Examiner is of the opinion that, since neither Makris nor Nishida expressly states that refractory insulation is used, the peripheral walls of the references are free of refractory insulation. Alternatively, the Examiner holds that it would be an obvious matter to reduce the use of refractory insulation along the peripheral walls of Makris and Nishida in order to increase heat conduction and reduce cost.

While the Examiner is correct in that neither Makris nor Nishida expressly states that refractory insulation is employed, the use of refractory insulation in reactors such as those of the references is standard in the art. Hence, it is the applicant's opinion that the peripheral walls in the

calcination zones of Makris and Nishida are completely lined with refractory insulation and that claim 31 and its dependent claims 32-36 are not anticipated by these references.

Furthermore, since the use of refractory insulation in reactors such as those of Makris and Nishida is standard in the art, and since neither reference states that part of the peripheral wall in the respective calcination zone may be free of refractory insulation, one of ordinary skill has no motivation to remove refractory insulation from part of the peripheral wall of Makris or Nishida. The applicant accordingly believes that claim 31 and its dependent claims 32-36 do not become obvious from these references.

In view of the foregoing, it is respectfully requested that the rejection of claims 31-36 under 35 USC 102(e) or, in the alternative, under 35 U.S.C. 103(a) be withdrawn.

Please charge any costs associated with this response to our Deposit Account No. 17-0055.

Respectfully submitted,



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